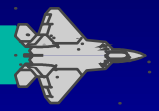
AWSIM TBMCS Interface



Modeling Simulation and Training
Product Area Directorate

AFSOM SRB/CCB
6-8 Oct 98

EFX 98 AWSIM/TBMCS (ATI)

- **On-Site Support**
  - **Initial Integration Test (CUBE-Hanscom AFB):**
    - **1 Technical Controller - 5 Days (1 Man Week)**
    - **1 Developer - 5 Days (1 Man Week)**
  - **Spiral 2: 2 Developers - 7 Days (2.8 Man Weeks)**
  - **Spiral 3:**
    - **Integration Test: 2 Developers - 5 Days (2 Man Weeks)**
    - **Execution: 2 Developers 10 Days (4 Man Weeks)**
  - **Demonstration:**
    - **1 Technical Controller - 21 Days (4.2 Man Weeks)**
    - **1 Developer - 10 Days (2 Man Weeks)**
    - **2 Developers - 11 Days (4.4 Man Weeks)**
  - **Total On-Site Support:**
    - **Developers: 16.2 Man Weeks**
    - **Technical Controllers: 5.2 Man Weeks**

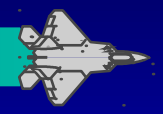
EFX 98 AWSIM/TBMCS (ATI)

- **Results (1 of 2):**
  - **New USMTF Message Used - ATO. CTAPS Utilizes ATOCONF.**
  - **Successfully parsed/processed all ATOs during Spiral 3 and Demonstration.**
    - **2 during spiral 3, 15 during EFX 98**
      - Total Missions Processed: 8953 (includes reprocessing and changes)
      - 32 ATO Changes processed
    - **Estimated Man Hours to Manually Process: 745**
  - **All ATOs Contained Suprises**

EFX 98 AWSIM/TBMCS (ATI)

- **Results (2 of 2):**
  - **Successfully provided mission updates to TBMCS (JAOC-R or JAOC-F)**
    - **Provide in excess of 38,000 updates, simulating direct operator input via FLEX.**
      - Estimated man hours to replicate manually: 633
    - **ETD, ATD, ATR/A**
    - **Mission Status, Mission Results**
    - **Information provided back into AODB (ATOPLN)**
  - **TOTALs Estimated ManPower Savings Provided by ATI = 8.3 Man Months over 15 Day Demonstration.**

EFX 98 AWSIM/TBMCS (ATI)



- **Observations (1 of 4):**
  - **Troubleshooting ATI/FLEX updates limited by FLEX availability**
    - **On-Site Developed Database Reporting Script Allowed Developers and Operators Visibility into the FLEX (ATOPLN) Database.**
  - **TBMCS allows non-compliant USMTF and blank mandatory fields**
    - **Still much room for improvement in ATO generation**
      - **ATO Processing Must Consider Human Element: That is, if a human would understand the tasking, ATI should handle it.**
      - **Utilize Mission Models**
    - **Ops/M & S communities needs to determine how much variance we want to allow to ensure effective training**

EFX 98 AWSIM/TBMCS (ATI)

- **Observations (2 of 4):**
  - **USMTF 98 ATO Standard Inconsistent:**
    - **AMC Mission Numbers (12 Chars) in AIRMOVE Segments (8 Char Max)**
  - **AIR Launched Cruise Missile Tasking: Begin and End Times of Designated Launch Point Airspace Assignment outside of TOT.**
    - **Calculate firing times based upon cruise missile speeds, cruise missile ranges and cruise missile launch point. Additionally, may have to calculate the cruise missile launch point.**
  - **FLEX Divert Mission Updates:**
    - **Mission Status tables are "Preloaded" when ATO is published. No allowance for Mission Diverts (row not preloaded).**

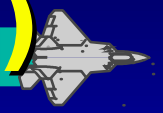
EFX 98 AWSIM/TBMCS (ATI)

- **Observations (3 of 4):**
  - **Uncorrelated ACMs Tasking:**
    - The ATO can task missions to use airspace that is not identified in the ACO. That airspace can exist in the AODB and not be associated with the ACO.
    - C2IPS routes are not reflected in the ACO.
  - **TBMCS USMTF Processor (IRIS) Too Restrictive**
    - Messages must be 100% compliant on input.
  - **Common Message Processor (CMP);**
    - JMAPS Binary had several defects.
      - No “show stoppers”
      - CECOM notified (CMP Program Office)
      - WPL Labs attended DII COE Message Processing Working Group (25 Sep 1998).
    - Recommendation: WPL Labs attend USMTF Groups

EFX 98 AWSIM/TBMCS (ATI)

- **Observations (4 of 4):**
  - **EFX98 Hotwash Results:**
    - **TMBCS not ready, Air Force found out now. Modeling and Simulation enabled the system to be effectively tested.**
    - **TMBCS should be core initiative for EFX99.**
    - **Coordinated, Painless Rollback and Replay capability needed.**
      - **Must be coordinated between simulation components and C4I systems.**
    - **Colonel John Sheekly, 12th AF C2 Combat Ops Commander:**
      "Logistics play must become a relevant part of the C4I-Simulation system. We cannot continue to play with unlimited resources. This is negative training."

UFL 98 AWSIM/CTAPS (ACI)



- ACI Processed 18 ATOCONFS for UFL98
  - Mission Tasking Exceeded 2000 Missions for some ATOCONFS.
  - 24104 Missions Processed in Total
  - Manpower Equivalent: 2009 Man Hours
- ACI Provided 183600 CTAPS Database Updates
  - Manpower Equivalent: 3060 Man Hours
- Total Manpower Savings: 30.4 Man Months
  - Estimates based on 1 Man-Minute per update 5 Man-Minutes per Mission (average time based upon an experienced AWSIM controller knowledgeable with the USMTF ATOCONF.